

CLAIMS

1. Assembly comprising:
 - a ring having anchoring elements for attaching the ring in a passage surrounded
 - 5 by body tissue, in particular blood vessel tissue;
 - an applicator for fitting the ring in the passage;in which the anchoring elements have an anchoring position in which they protrude outwardly with respect to the ring, and
in which the anchoring elements comprise a memory material, such as a memory metal
10 or memory polymer, and are designed so that they can be bent from an anchoring position counter to a spring force into a fitting position and can be frozen in this fitting position by a temperature treatment in order to bend the anchoring elements back from the fitting position by the effect of this spring force into the anchoring position when a predetermined threshold temperature is exceeded; and
15 in which the applicator is provided distally with a carrier for carrying the ring; characterized in that,
the assembly is provided with an influencing system for influencing the temperature of the anchoring elements of the ring carried by the carrier in such a way that the anchoring elements bend back from the fitting position to the anchoring position by
20 increasing the temperature of the anchoring elements to above the threshold temperature.
2. Assembly according to Claim 1, in which the influencing system comprises a cooling device for cooling the anchoring elements to a temperature below the threshold
25 temperature.
3. Assembly according to Claim 1 or 2, in which the influencing system comprises a heating device for heating the anchoring elements to a temperature above the threshold temperature.
- 30 4. Assembly according to any of the preceding claims, in which the part of the carrier contacting the ring is made of a metal, and in which the influencing system is connected in a heat-exchanging manner to that part of the carrier contacting the ring or

forms part of the carrier.

5. Assembly according to any of the preceding claims, in which the influencing system comprises a Peltier element.

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6. Assembly according to any of the preceding claims, in which the influencing system comprises a channel for supplying a fluid, such as a liquid or gas, to the carrier.

7. Assembly according to Claim 6, in which the channel comprises at least one free outlet for bringing the fluid into contact with the anchoring elements or the ring.

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8. Assembly according to any of the preceding claims, in which the influencing system comprises a source for generating an alternating electromagnetic field, and in which the carrier and/or the ring and/or the anchoring elements are designed in such a manner that they are sensitive to heating by this alternating electromagnetic field.

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9. Assembly according to Claim 8, in which the source comprises at least one electrically conductive loop which can be connected to an alternating current source.

10. Assembly according to Claim 9, in which the loop surrounds a passage of a size such that the ring can be accommodated therein with play, the size of the passage preferably being at least 1.2 times larger, for example 1.5 times larger, than that of the ring.

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11. Assembly according to any of the preceding claims, in which the carrier comprises gripper parts which can be moved between a position gripping the ring and a position releasing the ring.

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12. Assembly according to any of the preceding claims, in which the applicator comprises a sleeve which can slide along the applicator between a position overlapping the ring provided on the carrier and a position exposing the ring provided on the carrier.

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13. Assembly according to Claim 12, in which the sleeve comprises a distal part

which tapers in the distal direction to form a diameter which is smaller than that of the ring, and in which that distal part consists of axial fingers which can bend radially outwards from the tapering position in such a manner that this tapering part of the sleeve can be displaced over the ring.

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14. Assembly according to Claim 12, in which the sleeve is provided at its distal end with axial fingers and the ring is provided at its distal end with these anchoring elements, a space being left between neighbouring axial fingers and in which the axial fingers are provided in such a manner that, when the ring is accommodated in the sleeve, each axial finger overlaps a respective distal anchoring element.

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15. Assembly according to Claim 14, in which the ring is provided at its proximal end with a flange which extends radially outwards for interaction with the distal anchoring elements, and in which this flange is provided with passages for those axial fingers.

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16. Assembly according to Claim 14, in which the ring is provided with these anchoring elements at its proximal end, and in which these proximal and distal anchoring elements are provided in a staggered manner with respect to each other, seen in the tangential direction of the ring, in such a manner that the axial fingers can overlap with the distal anchoring elements when they protrude through the proximal anchoring elements.

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17. Assembly according to any of the preceding claims, in which the composition of the material of the anchoring elements is chosen such that the threshold temperature is around or below the human body temperature.

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18. Assembly according to Claim 17, in which the threshold temperature is in the range $\leq 37.5^{\circ}\text{C}$.

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19. Assembly according to Claim 17 or 18, in which the threshold temperature is in the range $[19^{\circ}\text{C}, 37^{\circ}\text{C}]$, in particular in the range $[24^{\circ}\text{C}, 34^{\circ}\text{C}]$.

20. Assembly according to any of the preceding claims, in which the influencing system is designed to be able to raise the temperature of the anchoring elements to at least 5-10°C above the threshold temperatures.
- 5 21. Assembly according to any of the preceding claims, in which the influencing system is designed to keep the temperature of the anchoring elements approximately 10-28°C below the threshold temperature.
22. Assembly according to any of the preceding claims, in which the ring is provided
10 with a valve prosthesis, in particular a heart valve prosthesis.
23. Assembly according to Claim 19, in which the valve prosthesis comprises one, two or more valve leaflets, and in which carrier is provided with a longitudinal member extending in the longitudinal direction, against which longitudinal member the valve
15 leaflets of the valve prosthesis supported by the carrier rest in their open position.
24. Assembly according to one of Claims 1-21, in which the ring is a ring provided with further anchoring elements for attaching a valve prosthesis therein.
- 20 25. Assembly according to one of Claims 1-24, in which the ring is a valve reconstruction ring.
26. Assembly according to one of Claims 1-24, in which the ring is an anastomosis attachment ring.
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27. Assembly according to one of Claims 1-26, in which the ring is provided with further anchoring elements for attaching a cannula and/or port and/or operating channel.
- 30 28. Assembly according to any of the preceding claims, in which the assembly is fitted with one or more sensors and/or one or more marks distally, in particular near the carrier.

29. Applicator suitable for an assembly according to any of the preceding claims.
30. Ring suitable for an assembly according to any of Claims 1-28.
- 5 31. Heart valve prosthesis comprising:
- a ring member for attachment to body tissue surrounding said ring;
 - one, two or more valve leaflets arranged inside the ring-member; and
 - a constriction system having anchoring pins for penetrating into the body
- 10 tissue, the anchoring pins being arranged around the circumference of the ring member and adapted to move, when the pins have fully penetrated into the body tissue, the pins from a first penetrated position in a radial inward direction to a second penetrated position to constrict the body tissue.
- 15 32. Prosthesis according to claim 31, wherein the pins are bent from the second penetrated position into the first penetrated position against a spring force and are fixed in the first penetrated position in a releasable manner such that upon release the pins return to the second penetrated position.
- 20 33. Prosthesis according to claim 31 or 32, wherein the pins are arranged on a carrier adapted to shorten such that the pins move in radially inward direction.
34. Prosthesis according to one of claims 31-33, wherein the constriction system comprises a ring element adapted to lie around the ring member.